Health Issues – PFC Compounds

Perfluorinated Compounds

INTRO

- **Our Region has had experience in dealing with these compounds – C-8 discovered at Dupont Washington Works**
- **Since then the national Rule for Unregulated Contaminant Monitoring has uncovered additional water supply places and sites of interest**
  - **We have roughly 12 locations across 3 states thus far**
- **Though a hot issue in Region 3 states, nationally we are only seeing about 1% of the samples and 2% of the systems with hits.**
  - **UCMR is used to determine what we regulate as MCLs for the future – unlikely to be a national standard soon**
- **Have worked in coordination with state and federal hazardous site cleanup programs to address sources where this is known**

- **The Unregulated Contaminant Monitoring Rule (UCMR)**
  - PFC's were found in only approximately 1% of the samples and 2% of systems nationwide, The UCMR data will be used to determine the need for any additional regulatory provisions, like setting maximum contaminant levels (MCL's). There are no indications that MCL's will be set for these or other contaminants on the UCMR list 3.

  - Nationally, **63 water systems** had one or more wells above the new Heath advisory. In our Region we had 9 water systems identified, using UCMR and other data, but site investigations have shown far more public and private wells impacted. To date we have about **170 private wells and over 20 public wells either offline or on again with GAC treatment.**

A NEW HEALTH ADVISORY IS ISSUED:

- As you know, EPA issued a new life-time health advisory on May 19,2016, and replaces the existing provisional health advisory for PFOS and PFOA
  - The health advisory sets a combined value of 0.07 ppb (or 70 parts per trillion) for PFOA and PFOS combined. It does not include the potential additive effects of other PFC's that were sampled as part of the UCMR.

- The value sets a 70 year life-time exposure value, to be protective of nursing mothers and infants, and therefore is protective of all other populations and ages.

- The Health Advisory was developed to provide the best available science, to **enable the states and local authorities to make decisions when these chemicals are present in water systems**. As noted earlier, EPA is unlikely to promulgate a health based standard in the near term or ever.

- **The STATE RESPONSE STRATEGIES HAVE INCLUDED:**
  - Ensuring folks have alternate water sources in the near term
  - Making provisions for full GAC treatment of GW sources- holding polluter responsible
  - Addressing the source of contamination where known with appropriate actions

  - WE are thankful for the state and local leads in responses to date – R3 had been an early leader but other states have been active

- **CAN PROVIDE STATE-SPECIFIC STATUS INFORMATION AS YOU NEED IT**
  - D.C. – No impacts identified to date
  - Delaware- 3 water systems impacted with one system back online with treatment, the other wells remain offline.
  - Maryland- No water systems identified to date
  - Pennsylvania- 5 water systems (approximately 16 wells) impacted in Harrisburg, Bucks, and Montgomery Counties
  - Virginia- No large systems identified but one Federal Facility water system is off line at Fentress Naval Air Station near Chesapeake, VA
  - West Virginia- Ongoing investigation in the Washington Works area with DuPont providing new treatment to Vienna and additional investigation of additional water systems in WV and Ohio, also impacts to Martinsburg with an unknown source of PFOS.

- CURRENT ISSUES: Lab Capacity – NEED MORE CERTIFIED

  - Few laboratories certified by EPA for UCMR monitoring; certifications due to expire soon. These laboratories are operating at capacity. Some not accepting new contracts.
  - No plans from EPA to continue direct certification of laboratories
  - States can accredit labs for unregulated contaminants through the National Environmental Laboratory Accreditation Program (NELAP)
  - Modifications to Method 537 may also be reliable for drinking water analysis, but QA/QC has not been done.

- CURRENT ISSUE: Household treatment units.

  - Currently no third party certifications of POE/POU devices exist.

- NSF International plans to create a PFC certification program in the near future and encourage review of various types of point of use and whole house units.
- Units installed by DuPont and federal facilities will have ongoing monitoring to determine their effectiveness.

CURRENT ISSUE: What does the number mean when slightly below the threshold? Water utilities under pressure to remove it.

Superfund Issues

The use of CERCLA authority to address PFC contamination may prove to be difficult.

We have to stay cognizant of the fact that the lifetime HAL for PFOS and PFOA is a guide for public drinking water systems; **it is not a drinking water standard – it is not a trigger for Superfund action.** Lifetime health advisories serve as guidance and are benchmarks for determining if concentrations of chemicals in tap water from public utilities are safe for public consumption. They provide state, local and tribal governments with non-regulatory guidance to make decisions on a local basis in cases where a chemical is not federally regulated.

PFCs are also not hazardous substances, and any response conducted by EPA could not be subject to cost recovery.

As EPA continues to study the health effects of PFOS and PFOA, the lifetime HAL offers a margin of protection for all Americans from a life-time of exposure to PFOA and PFOS from drinking water.

- Reference dose (RfD) for PFOA and PFOS is 0.00002 mg/kg/d
- Lifetime Health Advisory is 0.07 µg/L OR 70ppt

(A Reference Dose (RfD) is used as a benchmark for the prevention of long-term toxic effects other than carcinogenicity)

The Agency may consider a response to PFC contamination pursuant to CERCLA based first on an Rfd of 400ppt, then a site specific evaluation looking at risk screening levels to approach the hazard index that would justify a removal action.

- Evaluating current science on a site-specific basis to inform cleanup decisions
- Developing consensus Agency analytical methods for soil/sediment and non-drinking water
- Exploring potential ecological risk issues
- Assessing options to evaluate toxicity of other Perflourinated compounds

Contamination of drinking water is typically a localized issue associated with a specific facility such as a manufacturing plant or airfield that made or used PFOA or PFOS.

If PFOA and PFOS is found in drinking water systems at concentrations greater than 70 parts per trillion, EPA recommends that water systems quickly undertake additional sampling to assess the level, scope, and localized source of contamination. **Superfund could assist in information gathering efforts to identify the source of the contamination.**

Region 3 is currently supporting the U.S. Navy Response to Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) in Private Drinking Water Wells.

At the request of the U.S. Navy and the Air National Guard (ANG), the U.S. Environmental Protection Agency (EPA) continues to provide sampling and technical support for private drinking water wells in the Horsham, Warminster and Warrington, Pennsylvania areas for PFOS and PFOA found at the Willow Grove Naval Air Station Joint Reserve Base (NASJRB) in Horsham and the Naval Air Development Center, (NADC) in Warminster.

Elsewhere, EPA's Superfund Program is evaluating:

- 315 DoD sites with fire training areas.
- airports known or suspected of responding to fires or conducting fire training
- 113 sites with possible past chromium plating.
- 100s of sites associated with PFAS manufacturers.
- Industries: electronics, coatings, photography, mining, paints, inks, lubricants, hydraulic fluids, etc.
- Unlined landfills, land with biosolids application, chemical refineries, etc.

Health Impacts

- Studies indicate that PFOA and PFOS exposure results in multiple health effects including:
  - developmental effects
  - increased total cholesterol
  - liver and kidney effects
  - immune effects
  - reproductive effects

- Under EPA's Cancer Guidelines there is Suggestive evidence of carcinogenic potential for both PFOA and PFOS

Other information:

- Toxicity values for PFOA/PFOS do not apply to other PFASs.
- EPA analytical method exists for drinking water but no current multi-lab validated methods for other environmental media.
- All PFAS analytical methods require uncommon equipment.
- Fw available cleanup technologies for PFASs.
- EPA CERCLA authority on Federal Facility cleanup applies primarily to NPL sites